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Ichthyological Notes

New, Rare or Uncommon Fishes from Japanese Waters. V. Notes on the Rare Fishes of the Suborders *Stromateoidei* and *Tetragonuroidei* (BERG). (*continued from p. 192.*) By Tokiharu ABE

C. Records of Ariomma lurida from Sagami Bay. i) An adult male from Akazawa (north of Shimoda).* On April 12, 1952, an adult male, measuring *ca.* 430 mm in total length, of *Ariomma lurida* JORDAN *et* SNYDER was taken by a trap net off Akazawa, Tajima-mura, Shizuoka Prefecture. It was deposited at the Itō Branch Station of the Shizuoka Prefectural Fisheries Experiment Station, and later sent to the writer for study. This specimen is believed to be the second to be recorded from Japanese waters. The first record was given in 1952 by Prof. M. KATAYAMA. His specimen was collected at the market of Kōchi City on November 30, 1950. It measured *ca.* 183 mm in total length. As JORDAN (1923) and KATAYANA (1952) pointed out, *Ariomma* is a genus belonging to the family *Nomeidae.*

The specimen from off Akazawa measures 387 mm in fork length and 356 mm in standard length. The following measurements are given in hundredths of the standard length: Length of head 27.0, greatest depth of body 26.3, greatest breadth of body 17.7, least depth of caudal peduncle 5.5, diameter of eye** 6.5 (left) and 6.0 (right), interorbital (not bony) breadth (above centers of orbits) 10.3, length of snout 9.4, lentgh of highest (4th) dorsal spine 11.7, length of highest (2nd) soft fin-ray of dorsal 6.7, length of highest (2nd) anal spine 2.7†, length of longest pectoral fin-ray 13.6 (left) and 13.3 (right), length of ventral spine 6.5, length of longest (2nd on the left side; 1st on the right side) ventral soft-ray 10.7.

D. XI. I 15 (posterior soft-rays widely apart; last fin-ray thick); A. II 15; P. 24 on both sides (uppermost 2 rays unbranched; length of uppermost fin-rays increases down to 4th or 5th ray); V. I 5 (all fin-rays branched) on both sides. Ventral fins are received in a shallow groove, and the innermost fin-ray is connected with the belly by an extremely thin, semi-transparent membrane.

Pseudobranchiae well developed. Inner fold of left branchiostegal mambrane seems to cover its parther proximally. Branchiostegals *ca.* 6 on both sides. Gill-rakers 11+18 (left) and 9+1+19 (right). Tongue very wide, concave dorsally, and its anterior margin is nearly straight. It has numerous minute tubercles on the dorsal side. Inner side of opercle and proximal 2/3 of skinny ledge

(*continued on p. 246*)

* A new Japanese name, "Ōme-kon-nyaku-aji", is here proposed.

** The adipose eyelid is well developed, but covering the margin of the orbit only for a short distance. The measurement of the diameter of orbit was taken from the exposed part of the eye.

† The soft anal fin-rays have been damaged. The 3rd fin-ray seems to be the highest (excepting for the last fin-ray which is thick and long), which measures *ca.* 5.1 % of the standard length.

anniversary of the foundation of the Japan Sea Regional Fisheries Research Laboratory (日本海区水産研究所創立3周年紀念論文集), p. 271.

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continued from p. 222

of lower jaw blackish. Teeth are present only on jaws, small, rather slender (being fairly widely separated from one another) and arranged in a few rows anteriorly which taper laterally.

Sclaes are cycloid, large, soft and very deciduous. Lateral line high; there are only ½ 2 rows of sclaes between dorsal base and lateral line. Scales along lateral line *ca.* 50.

Testes attenuated and narrow. Peritoneum not black. Posterior part of pharynx has a pair of hard sacs which are internally provided with papillae bearing teeth. Nostrils paired on each side, located near anterior end of snout.

The general appearance, and more especially that of the head region, is sugestive of *Icticus* and *Tetragonurus*. Color in farmalin is greyish brown, lighter below. The spinous dorsal is much darker than the other fins.

ii) *A young example from Manazuru.* During July-August 5, 1952, Mr. Masaji HIRAI, Manazuru Branch Station, Tokai Regional Fisheries Research Laboratory, collected a young example of *Ariomma lurida* taken by a trap net at Takaura (near Manazuru), and presented it to the writer for study. The specimen measures 113 mm in total length, 103 mm in fork length and 95 mm in standard length. The following measurements are given in hundredths of the standard length: Length of head 20 0, greatest depth of body 26.3, greatest breadth of body 14.7, least depth of caudal peduncle 5.8, diameter of eye* 7.6, interorbital (not bony) breadth (above centers of orbits) 10.5, length of snout 10.5, length of highest (3rd) dorsal spine 12.6, length of highest (2nd) dorsal fin-ray 7.9, length of highest (2nd) anal spine 4.2, length of highest (1st and 2nd) anal fin-ray 6.8, pectoral fin damaged, length of ventral spine 9.5, length of longest (3rd, counted from outside) ventral fin-ray 15.8, length of longest caudal fin-ray *ca.* 20.0.

D. XII 15 (anteriomost 2 or 3 fin-rays unbranched); A. II 15 (anteriormost 1 fin-ray unbranched; P. 23 on each side; V. I 5 (all fin-rays branched; received in a long and narrow groove which reaches anal origin).

Pseudobranchiae very well developed. Inner fold of branchiostegal membrane not covering its partner proximally Branchiostegals 6 on each side. Gill-rakers 9/1/19 (left) and 11/1/19 (right). Shape of tongue as in the larger specimen mentioned above. Tongue and palatines with extremely fine teeth. Jaw teeth are as in the larger specimen.

Scales have been rubbed off. The coloration differs considerably from the adult mentioned above. The tint of the back and inner side of the opercle are as in the adult, but there are three large violet (or dark brown) blotches on the side of the trunk and much smaller markings of irregular shape on the back. Spinous dorsal fin has blackish spots of small size. The ventral fin is mostly black. The caudal, pectoral and anal fins have no markings.

(*continued on p. 255*)

* The adipose eyelid is fairly well developed, but not covering the greater part of the eye.

plates. The teeth are either inserted between these plates or attached to either of the two. The teeth of the jaws stand in a row, and the palatine teeth are in two rows. These teeth are all elongated cones. The vomerine, lingual and pharyngeal teeth are very small and swarm in the form of villiform teeth. They curve inwards and backwards.

3. Microscopic Findings.

With the exception of the villiform teeth of which the presence of enamel is doubtful, all the teeth consist of enamal and dentin.

The enamel is of homogenous structure, and covers one half or one-third from the apex of a tooth.

The dentin of this fish is identical with the osteodentin described by C. S. TOMES in his study of the pike, and includes what R. OWEN called medullary canal.

These teeth when fully developed, are anchylosed to the bones.

(*continued from p. 246*)

References

In addition to the publications* referred to by KATAYAMA (1952), the following have been consulted:

JORDAN, D. S. 1923. A classification of fishes including families and genera so far as known. Stanford Univ. Univ. Publ. Ser., Biol. Sci., iii, no. 2, pp. 77-243, i-x.

KATAYAMA, M. 1952. A record of *Ariomma lurida* JORDAN *et* SNYDER from Japan, with notes on its systematic position. Jap. Journ. Ichth., ii, no. 1, pp. 31-34.

D. A record of an adult female of Icticus pellucidus from Kushiro. It may be an apology for the brief reports by the writer on rare fishes that additional specimens of these fishes have come to light one after another along with other valuable specimens of fishes. Recently Mr. M. SAKURAI (Chief, Kushiro Branch Station, Hokkaido Regional Fisheries Research Laboratory, Kushiro, Hokkaido) has kindly sent the writer an adult female of *Icticus pellucidus* (LÜTKEN) taken on July 8, 1954, in a salmon drift-net set 30 miles south of Kushiro. It is a giant, measuring *ca.* 480 mm in total length, 426 mm in fork length and 400 mm in standard length. The left ovary is 60 mm in length, 10 mm in breadth; the eggs are hardly visible to the naked eye. The following measurements are given in hundredths of the standard length: Length of head 30.0, greatest depth of body (at anal origin) 29,3 greatest breadth of body (at posterior end of head) 11.9, breadth of body at anal origin 9.5, least depth of caudal peduncle 7.0, diameter of eye** 7.5, interorbital breadth (not bony) above centers of orbits 9.0, length of snout 9.9, length of highest (5th) dorsal spine 7.0, length of highest (3rd) soft fin-ray of dorsal 8.4, length of highest (3rd) soft fin-ray of anal 7.5, length of longest (5th and 6th) fin-ray of pectoral 15.0, length of longest (3rd from outside) fin-ray of ventral 6.8.

D. XII 30 (=ii+28). The 1st through 11th spines fitted in a distinct, but narrow groove; 12th spine nearer to 1st soft fin-ray than to 11th spine. A. II29 (=i+28). P. 19 on both sides. The uppermost 2 fin-rays unbranched. V. 6 (=i+5) on both sides. The innermost fin-ray is connected by a membrane with the inside of the groove which extends from the ventral origin to the vent and receives the ventral fins.

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* The paper by GILCHRIST and von BONDE 1922 (1924) has not been seen by the present writer.

** The eyeball is well separated from the margin of the orbit.

Pseudobranchiae very well developed. Branchiostegals 6 on each side; left or right branchiostegal membrane proximally not covering its partner. Gill-rakers 9/1/15 i (left) and 9/1/15 (right). Pored scales in lateral line *ca.* 110; opercular bones covered with scales of moderate size; upper part of head naked; scales cycloid and deciduous.

Teeth of upper and lower jaws very small and arranged in a single raw; those of upper jaw extremely fine, tips being widely apart from one another. Number of teeth of upper jaw *ca.* 30 (left) and *ca.* 29 (right). They are proximally covered by a thick continuous membrane. Teeth of lower jaw triangular, mostly directed backwards, and provided on each margin with a few antrorse spines which are invisible to the naked eye. Number of teeth of lower jaw *ca.* 53 (left) and *ca.* 55 (right). They are fairly close-set and covered proximally by a continuous membrane. Palatine has a few small teeth, but vomer is edentulous. Despite higher number of jaw teeth, rounded lower jaw and lower body, the present specimen well agrees with the younger examples reported upon by the writer under the names of *Papyrichthys ischanus* and *Icticus ischanus* (Japan. Journ. Ichth., vol. iii, no. 2, pp. 92, 93, fig. 2; vol. iii, nos. 3/4/5, p. 170) in many other characters. It is especially interesting to note that the palatine has a few teeth in the present specimen as in the specimen from Okinawa described by JORDAN and THOMPSON (1914), and that the vomerine teeth are lacking in the former specimen whereas in the latter specimen they are present. The coloration of the present specimen is generally darker than in the younger ones. The buccal cavity, lining of gill-chamber and the ventral side of the body are black (although the first is covered with the mucus which is grey in formalin).

For "References" see TOMIYAMA and ABE's "Figures and descriptions of the fishes of Japan", vol. L. Under press.

(to be continued)

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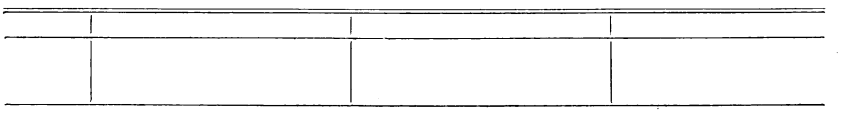

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